Upper Souris National Wildlife Refuge, Dam 87
Along the Souris River
Ward County (Foxholm, vicinity)
North Dakota

HAER No. ND-3-B

HAER
ND,
51-FOX.V,
1-B-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
Rocky Mountain Regional Office
National Park Service
U.S. Department of the Interior
12795 W. Alameda Parkway
Denver, Colorado 80225

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HISTORIC AMERICAN ENGINEERING RECORD

Upper Souris National Wildlife Refuge, Dam 87

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Location: Along the Upper Souris River, in the Upper Souris National Wildlife Refuge, Ward County, North Dakota (FOXHOLM VICINITY)

UTM: Zone 14, N. 5367260 m, E. 312380 m
Quad: Carpio NE

Date of Construction: 1935-1936

Present Owner: U.S. Fish and Wildlife Service

Present Use: Damming Souris River

Significance: The dams within the Upper Souris National Wildlife Refuge represent a historical movement to preserve wildlife and wildlife habitat in the United States, which began in the mid-19th century and continues today. The refuge dams are significant for their association with the development of the national wildlife refuge system during the New Deal Era. At the time of its creation, the J. Clark Salyer Wildlife Refuge was considered the most important project in the Federal Government's program of migratory waterfowl habitat restoration. The dams also are representative examples of dams designed by the Federal Government during the New Deal Era for conservation projects.

Historians: Frederick L. Quivik, RTI, Inc., August 1989
Mary E. McCormick, RTI, Inc., August 1989
Jane L. Carroll, St. Paul District Corps of Engineers, March 1990

For more historical information, see Upper Souris National Wildlife Refuge Dams, HAER No. ND-3

DAM 87

Dam 87 is located in Ward County (SE 1/4 Sec. 8 and SW 1/4 Sec. 9. T157N, R84W) about 2-1/2 miles southeast, or downstream, from the refuge headquarters near Dam 83 at Lake Darling. Dam 87 impounds water from the Souris River into small ponds and other wetlands suitable for waterfowl habitat, such as marshes and meadows.

Dam 87 is a homogeneous earthfill embankment, with an emergency spillway, a service spillway, and outlet works. The dam lies along a southwest/northeast axis and is 20 feet high. The crest of the earthfill embankment is flat and about 8 feet wide, 1,800 feet long, and at an elevation of 1,583.5 feet. The upstream side of the embankment has a slope of 5:1, while the slope of the downstream side is 3:1. The crest and slopes of the embankment are vegetated by grass and low brush.

The emergency spillway is an uncontrolled weir located along the crest of the emhankment, near the east embankment of the dam. The weir is of stone masonry construction and consists of a 700-foot-long wall with flared wing walls and a stone-masonry apron below its downstream side. At the west end of the weir wall is a concrete slot for a stoplog structure, but this slot has been filled in with dirt and the stoplog structure is inoperable. The crest elevation of the weir is 1,579.1 feet.

The service spillway and outlet works for the dam are located at the southwest abutment and are incorporated into a reinforced concrete structure that spans the main river channel. Concrete piers divide the structure into six bays and also support an overhead walkway consisting of a concrete deck with gas pipe railing. The walkway provides access to the two controls of the outlet works, as well as to the rest of the dam. The two outer bays at each end of the structure contain concrete weir walls, which comprise the service spillway. Each of the four weir walls, however, have been modified by the installation across their crest of a 3-inch by 12-inch plank that has raised the top elevation of the spillway to 1,578.2 feet. The planks are bolted at either end to wooden posts that are secured to the walkway above with steel channel section hangers.

The outlet works, located in a single bay near the middle of the concrete structure, consist of a radial gate measuring 16 feet by 8 feet with a top elevation for 1,578.4 feet. The radial gate is located at the upstream side of the concrete structure. Just east of the radial gate is a 4-foot by 4-foot sluice gate. Both the radial gate and sluice gate are operated hy manual hoists and the controls for the hoists are mounted on the walkway. The cast base for hoist control reads "*Western Foundry Co., Portland, OR.*" and the wheel for the radial gate is embossed with the letters, "*U.S.R.S.,*" which stands for the United States Reclamation Service, the predecessor agency to the Bureau of Reclamation. Immediately downstream from the gates is a stilling basin that consists of a concrete apron and plunge pool.